I Claim:

1. An optical transmitter for generating a digital optical signal sequence, comprising:

a plurality of independently drivable light transmitters, said light transmitters generating respective optical signals for respective bits of a digital electrical signal sequence, said respective optical signals being combined and superposed into an optical signal path; and

a control device distributing the bits between said light transmitters.

2. The transmitter according to claim 1, wherein said light transmitters generate said respective optical signals in a temporally staggered manner.

3. The transmitter according to claim 2, wherein the bits of the digital electrical signal sequence are alternately applied to said light transmitters by said control device in a fixed temporal order.

4. The transmitter according to claim 1, wherein said control device distributes between said light transmitters a number of bits of the digital electrical signal sequence which corresponds to a number of said light transmitters, and said

light transmitters simultaneously generate said respective optical signals.

5. The transmitter according to claim 4, wherein said respective optical signals are combined and superposed in said optical signal path in a temporally staggered manner.

6. The transmitter according to claim 5, wherein said optical signal path has a respective different length for each of said respective optical signals, said respective different length corresponding in each case to a length of one bit effecting a temporally staggered superposition of said respective optical signals.

7. The transmitter according to claim 4, wherein said respective optical signals are combined and superposed in said optical signal path in a non-temporally staggered manner.

8. The transmitter according to claim 1, wherein each of said light transmitters generates a pulse for a bit of the digital signal sequence, said bit being assigned by said control device.

9. The transmitter according to claim 1, wherein said light transmitters are disposed at a short distance from one another on a semiconductor chip.

10. The transmitter according to claim 1, further comprising a single waveguide disposed directly downstream of said light transmitters, said optical waveguide receiving said respective optical signals emitted by said light transmitters.

11. The transmitter according to claim 1, wherein said light transmitters are assigned to respective optical waveguides receiving said respective emitted optical signals, each of said respective optical waveguides being combined to form said single waveguide.

12. The transmitter according to claim 10, wherein said respective optical signals from said light transmitters are coupled into said optical waveguide via a coupling optical configuration.

13. The transmitter according to claim 1, wherein an even number of said light transmitters are provided.

14. The transmitter according to claim 1, wherein four light of said transmitters are provided.

15. The transmitter according to claim 1, wherein said light transmitters are edge emitting laser (EEL) or surface emitting laser (VCSEL) diodes disposed as an array.

16. A method for generating a digital optical signal sequence, in which a digital electrical signal sequence is converted into a digital optical signal sequence, which comprises the steps:

distributing bits of an electrical signal sequence between light transmitters generating a respective optical signal for each bit of the bits; and

combining and superposing each of the respective optical signals generated by the light transmitters in an optical signal path.

17. The method according to claim 16, wherein the step of generating the respective optical signal for each bit of the bits is performed in a temporally staggered manner.

18. The method according to claim 17, wherein the step of generating the respective optical signal for each bit of the bits is performed in such a way that the respective light transmitters generate the respective optical signal alternately and in a fixed order.

19. The method according to claim 16, wherein the step of generating the respective optical signal for each bit of the bits is performed in such a way that the light transmitters

simultaneously generate the respective optical signal after a respective bit of the electrical signal sequence has been obtained.

20. The method according to claim 19, wherein the step of combining and superposing the respective optical signals generated by the light transmitters into an optical signal path is performed in a temporally staggered manner by use of respective signal paths of different lengths.

21. The method according to claim 20, further comprising the step of coupling the respective optical signal of each of the light transmitters into an optical waveguide having a different length before combining and superposing the generated optical signals.

22. The method according to claim 19, wherein the step of combining and superposing the respective optical signal generated by the light transmitters into an optical signal path is performed in a non-temporally staggered manner.

23. The method according to claim 16, wherein the respective optical signal emitted by one of the light transmitters is a light pulse.